CLAIMS

1. A negative-resistance circuit comprising:

a transistor;

a plurality of distributed constant lines respectively connected to three terminals of said transistors; and

an inductance element connected between an output terminal of said negative-resistance circuit and a ground potential for adjusting a negative resistance value.

2. The negative-resistance circuit according to claim 1, wherein:

said inductance element comprises a distributed constant line shorter than one-quarter wavelength at a desired frequency for connecting between a signal conductor and the ground potential.

3. The negative-resistance circuit according to claim 1, wherein:

said distributed constant line is a coplanar type one composed of a signal conductor and ground conductors disposed to sandwich said signal conductor with predetermined gaps therebetween, and

said inductance element comprises a conductor piece which traverses only one of said gaps to connect said signal conductor with said ground conductor.

4. A negative-resistance circuit comprising:

a transistor;

a plurality of distributed constant lines respectively connected to three terminals of said transistors; and

a capacitance element connected between an output terminal of said negative-resistance circuit and a ground potential for adjusting a negative resistance value.

5. The negative-resistance circuit according to claim 4, wherein:

said capacitance element comprises a distributed constant line which is branched from a signal conductor, has an opened leading end, and is shorter than one-quarter wavelength at a desired frequency.

6. The negative-resistance circuit according to claim 4, wherein:

said distributed constant line is a coplanar type one composed of a signal conductor and ground conductors disposed to sandwich said signal conductor with predetermined gaps therebetween, and

said capacitance element comprises a conductor piece which is branched from said signal conductor and has an opened leading end.

7. The negative-resistance circuit according to claim 1, wherein a plurality of distributed constant lines are connected in parallel to at least one of the three terminals of said transistor.

8. The negative-resistance circuit according to claim 4, wherein a plurality of distributed constant lines are connected in parallel to at least one of the three terminals of said transistor.

9. A negative-resistance circuit comprising:

a transistor;

a plurality of distributed constant lines respectively connected to three terminals of said transistor; and

a plurality of distributed constant lines connected in parallel to at least one of the three terminals of said transistor.

10. The negative-resistance circuit according to claim 7, wherein:

one of said plurality of distributed constant lines connected in parallel is a distributed constant line which is longer than one-quarter wavelength and shorter than one-half wavelength at a desired frequency, and has a leading end connected to a ground potential.

11. The negative-resistance circuit according to claim 7, wherein:

one of said plurality of distributed constant lines connected in parallel is a distributed constant line which is shorter than one-quarter wavelength at a desired frequency, and has an opened leading end, and

the remaining distributed constant lines are distributed constant lines each having a leading end short-circuited to a ground potential.

12. The negative-resistance circuit according to claim 8, wherein:

one of said plurality of distributed constant lines connected in parallel is a distributed constant line which is longer than one-quarter wavelength and shorter than one-half wavelength at a desired frequency, and has a leading end connected to a ground potential.

13. The negative-resistance circuit according to claim 8, wherein:

one of said plurality of distributed constant lines connected in

parallel is a distributed constant line which is shorter than one-quarter wavelength at a desired frequency, and has an opened leading end, and

the remaining distributed constant lines are distributed constant lines each having a leading end short-circuited to a ground potential.

14. The negative-resistance circuit according to claim 9, wherein:

one of said plurality of distributed constant lines connected in parallel is a distributed constant line which is longer than one-quarter wavelength and shorter than one-half wavelength at a desired frequency, and has a leading end connected to a ground potential.

15. The negative-resistance circuit according to claim 9, wherein:

one of said plurality of distributed constant lines connected in parallel is a distributed constant line which is shorter than one-quarter wavelength at a desired frequency, and has an opened leading end, and

the remaining distributed constant lines are distributed constant lines each having a leading end short-circuited to a ground potential.

16. The negative-resistance circuit according to claim 7, wherein:

said transistor is a field effect transistor, and

said terminal to which said plurality of distributed constant lines are connected in parallel is a source of said field effect transistor.

17. The negative-resistance circuit according to claim 8, wherein:

said transistor is a field effect transistor, and

said terminal to which said plurality of distributed constant lines

are connected in parallel is a source of said field effect transistor.

18. The negative-resistance circuit according to claim 9, wherein:

said transistor is a field effect transistor, and

said terminal to which said plurality of distributed constant lines are connected in parallel is a source of said field effect transistor.

19. The negative-resistance circuit according to claim 16, wherein:

an output terminal of said negative-resistance circuit is disposed through a distributed constant line connected to a gate of said field effect transistor, wherein:

said negative-resistance circuit comprises:

a bias power source for supplying said gate with a predetermined DC voltage; and

a resistor connected between said bias power source and said distributed constant line connected to said gate.

20. The negative-resistance circuit according to claim 17, wherein:

an output terminal of said negative-resistance circuit is disposed through a distributed constant line connected to a gate of said field effect transistor, wherein:

said negative-resistance circuit comprises:

a bias power source for supplying said gate with a predetermined DC voltage; and

a resistor connected between said bias power source and said distributed constant line connected to said gate.

21. The negative-resistance circuit according to claim 18, wherein:

an output terminal of said negative-resistance circuit is disposed through a distributed constant line connected to a gate of said field effect transistor, wherein:

said negative-resistance circuit comprises:

a bias power source for supplying said gate with a predetermined DC voltage; and

a resistor connected between said bias power source and said distributed constant line connected to said gate.

22. An active filter comprising:

the negative-resistance circuit according to claim 1; and

a resonator connected in series with said negative-resistance circuit.

23. An active filter comprising:

the negative-resistance circuit according to claim 4; and

a resonator connected in series with said negative-resistance circuit.

24. An active filter comprising:

the negative-resistance circuit according to claim 9; and

a resonator connected in series with said negative-resistance circuit.